

Abstract Submitted
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Mixing dynamics of slurry in rotating drum KIWING TO¹, Institute of Physics, Academia Sinica, CHUN CHUNG LIAO², SHU-SAN HSIAU³, Department of Mechanical Engineering, National Central University — We study the effects of interstitial fluid viscosity on the rates of dynamical processes in a thin rotating drum half-filled with monodisperse glass beads. The rotating speed is fixed at the rolling regime such that a continuously flowing layer of beads persists at the free surface. While the characteristic speed of a bead in the flowing layer decreases with the fluid viscosity, the mixing rate of the beads is found to increase with the fluid viscosity. These findings are consistent to a simple model related to the thickness of the flowing layer.

¹Taipei, Taiwan 115, R.O.C.

²Jhongli, Taiwan 32001, R.O.C.

³Jhongli, Taiwan 32001, R.O.C.

Kiwing To
Institute of Physics, Academia Sinica

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